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Sir:

Please file the following enclosed patent application papers:

Applicant #1, Name: Rickie J. Wright

Applicant #2, Name: Wade R. Waterman

Title: Surface Protection System mat

☒ Specification, Claims, and Abstract: Nr. of Sheets 12

☒ Declaration: Date Signed: 1999 September 11

☒ Drawing(s): Nr. of Sheets Enc.: Formal: 13 Informal: _____

☒ Small Entity Declaration of Inventor(s) ☐ SED of Non-Inventor / Assignee / Licensee

☐ Assignment enclosed with cover sheet and recordal fee; please record and return.

☒ Check for \$ 380.00 for:

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☐ Information Disclosure Statement, Form PTO-1449, and listed references.

☐ Disclosure Document Program reference letter.

☐ Pursuant to 35 U.S.C. §119(e)(1), applicant(s) claim priority of Provisional Patent Application Ser. Nr. _____, filed _____.

☒ Return Receipt Postcard Addressed to Applicant #1.

☒ **Request Under MPEP § 707.07(j):** The undersigned, a pro se applicant, respectfully requests that if the Examiner finds patentable subject matter disclosed in this application, but feels that Applicant's present claims are not entirely suitable, the Examiner draft one or more allowable claims for applicant.

Very respectfully,

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Express Mail Label #

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; Date of Deposit 1999 September 11

In the United States Patent and Trademark Office

First/Sole Applicant: Rickie J. Wright
Joint/Second Applicant: Wade R. Waterman
Title: "Surface Protection System mat"

Small Entity Declaration—Independent Inventor(s)

As a below-named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35 United States Code, to the Patent and Trademark Office with regard to my above-identified invention described in the specification filed herewith. I have not assigned, granted, conveyed, or licensed—and am under no obligation under any contract or law to assign, grant, convey, or license—any rights in the invention to either (a) any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or (b) any concern which would not qualify as either (i) a small business concern under 37 CFR 1.9(d) or (ii) a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed—or am under an obligation under contract or law to assign, grant, convey, or license—any rights in the invention is listed below:

- ☒ There is no such person, concern, or organization
☐ Any applicable person, concern, or organization is listed below*

Full Name: _____

Address: _____

I acknowledge a duty to file, in the above application for patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Rickie J. Wright
Signature of Sole/First Inventor

Rickie J. Wright
Print Name of Sole/First Inventor

1999 September 11
Date of Signature

Wade R. Waterman
Signature of Joint/Second Inventor

Wade R. Waterman
Print Name of Joint/Second Inventor

1999 September 11
Date of Signature

*Note: A separate Small Entity Statement is required from any listed entity.

Patent Application of

Rickie J. Wright

Wade R. Waterman

for

TITLE: SURFACE PROTECTION SYSTEM MAT

CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable.

BACKGROUND—FIELD OF INVENTION

This invention relates to protecting surfaces, specifically floors and countertops exposed to damaging liquids. In the case of floors, it also addresses prevention of slips and falls.

BACKGROUND—DESCRIPTION OF PRIOR ART

Floors and countertops are subject to accidental liquid spills, and in the case of floors, potentially causing slip and fall hazards. Also, the liquid from the spills often damages the surface causing costly repairs. To preserve a dry condition, these floors and countertops require constant maintenance.

Normally, scheduled maintenance is used to monitor and clean up accidental spills. These spills occur frequently and often go unnoticed for long periods of time. Currently, excessive maintenance schedules attempt to solve the problem. However, damage to the surface still occurs between maintenance.

U.S. Patent # 4,285,075 (SANITARY COMMODE MAT), issued to Ann J. Nelson on August 25, 1981, provided a two piece unit for protecting floors from urine. This device has a solid base and a hingedly attached cover formed as grille work. This cover is treated with silicone compounds to repel fluids. A replaceable pad is contained in the mat cover. The pad has an impervious plastic film base, layers of absorbent material overlaying the base, and a top previous film of non-woven material. In use, the

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urine falling on the grille work passes through, on and through the permeable top film of the pad, and absorbed therein. The absorbent pad may be impregnated with disinfectant and deodorizing chemicals. Maintenance is performed by opening the hinged cover, removing the pad for disposal, rinsing the base and hinged cover grille work, and installing a fresh pad.

This product has a single purpose – keeping urine off restroom floors. No other uses are claimed or presented as additional embodiments.

U.S. Patent #4609580, issued to Luann T. Rochett, employed a surface mat of continuous filament, non-woven nylon to protect floors during inclement weather. The mat contained an absorbent inner layer comprised of a mixture of polymeric micro-fibers and wood pulp, and a liquid impervious film backing layer. This invention has no application under urinals. Additionally, the entire mat must be disposed during maintenance. This patent was discontinued eight years after issuance.

U.S. Patent #4,328,275, issued to Louis M. Vargo, is a disposable floor mat for bathrooms, hospital operating rooms, etc. used for absorbing liquid spills. The mat is designed to support a person, or persons, standing on it while it is being used. The stated uses include absorbing water, urine and other liquids found in bathrooms, etc. It is constructed of a sheet of liquid absorbent matting with raised portions of v-shaped or rounded cone tops coated with a repellent to direct and divert the liquid into the mat. A sanitizing agent must be impregnated into this matting to avoid cross-contamination. The liquid is retained in this absorbent matting. Ridges are built into the bottom of the mat to prevent contact with the contaminating liquid. Maintenance is accomplished by disposing the entire mat. This invention does not separate the liquid spills from the surface with a wicking or absorbing agent. Contaminated liquid (such as urine or blood) will remain on the tops of the v-shaped or rounded cones surfaces, causing cross-contamination and a slipping hazard. Excess liquid will flow in the valleys of the invention and on to the floor surface during maintenance. The height of this invention creates a tripping hazard.

U.S. Patent #5,114,774, issued to Henry A. Maxim, Jr., is an absorbent floor mat for use in wet and oily environments. This mat has a base unit with self-gripping fastener, and an absorbent top unit (upper surface). It is designed to reduce incidents of pedestrians slipping or sliding on wet or oily surfaces.

This removable absorbent unit is constructed of fiber material such as indoor-outdoor carpeting. An additional preferred embodiment provides for drainage between the absorbent unit and the base unit, allowing liquid or oil to drain into the base unit, rather than lying on top. No provision is made for use under urinals or around commodes. Liquid spills or drips remain on the surface exposed to pedestrian cross-contamination and slipping hazards. Maintenance is accomplished by removing the absorbent unit and hand-washing in cold water. After washing, the unit is dried by drip-drying or wringing. Dry cleaning is also an option. This puts the contaminated material in direct contact with the hands of maintenance personnel. Chemicals, oil, and similar spills cannot be disposed by washing down into a sanitary drain. The absorbent core material does not retain the spill effectively, nor does it remove it from the surface by wicking or absorbing means, it remains on the surface. Maintenance is required after every spill. This patent expired four years after issue.

U.S. Patent #4,822,669, issued to Robert C. Roga, is a floor protection system consisting of three separate pieces combined to form a single unit. The top layer is of nonwoven fiber, with a water impervious film, laminated to the underside. An absorbent paper layer, interposed between these two materials, is a second embodiment. This invention is not designed for urinals. The entire mat must be disposed and replaced. No method of cleaning or replacing the absorbent portion is indicated. The stated purpose of the top layer is to remove and retain soils. The stated purpose of the middle layer (second embodiment) is to absorb both water and oil based liquids, preventing them from subsequent contact with the top surface during use. This system fails to provide a maintenance method other than complete disposal, greatly increasing cost of controlling accidental spills. Use involves standing and/or walking in polluted fluids producing cross-contamination. This patent expired eight years after issue.

U.S. Patent #4,826,030, issued to Charles R. Valley, does not address floors.

U.S. Patent #4,798,754, issued to Lawrence S. Tomek, is an oil-absorbent floor mat designed for placement beneath a motor vehicle or machine to catch oil, grease, and other drippings. It is not intended for bathrooms or other uses.

U.S. Patent #5,028,468, issued to Alfred R. Taylor, is a surgical mat with disposable cover designed for use in a hospital operating room. This patent expired four years after issue.

U.S. Patent #4,439,474, issued to Paul J. Sagel, is an absorbent, disposable floor mat for entrance-ways.

U.S. Patent #5,128,189, issued to David H. Barlett, is a disposable mat operating rooms or chemistry labs and entrance-ways.

U.S. Patent #5,270,089, issued to Timothy E. Alston, is a fluid absorbing system for recovering waste fluids from defined areas.

U.S. Patent #5,383,570, issued to Terry Gordon, is a floor mat dispensing apparatus. However, no disposable floor mat is claimed.

U.S. Patent #4,484,661, issued to John L. Evenson, is a drip pan for vehicles, designed to catch drippings from parked automobiles or trucks.

U.S. Patent #5,549,945, issued to Bruce B. Lind, is an absorbent mat for oil and other liquid drippings beneath a motor vehicle.

U.S. Patent #5,506,040, issued to Peter J. Cordani, is a fluid absorption mat designed for placement beneath fluid leaking machinery.

U.S. Patent #5,080,956, issued to Linda K. B. Smith, is an oil absorbent mat with spill channeling means designed to surround the base of leaky machinery to inhibit the flow of oil-based liquids.

U.S. Patent #5,613,332, issued to Edward T. Saylor, Jr. is a slip resistant floor mat intended for foot traffic across wet floor surfaces.

U.S. Patent #5,916,658, issued to Ronald G. Mohr, is a mat designed to collect fluids and other debris falling from a vehicle.

U.S. Patent #4,497,147, issued to David D. Clapper, is a mat for garage floors and the like, designed to capture oil drippings from beneath a motor vehicle.

Patent application invention pending by Matthew G. Jenkins, employs a base mat to contain spills. It includes an insert to direct liquid to an absorbent pad located at the back of the mat. This system requires a flat surface to operate effectively. Most surfaces are not flat, but slope to a drain. The design of this

product does not take this into consideration and the liquid often does not reach the absorbent pad.

Additionally, liquids vary in viscosity and surface tension requiring more than gravity for proper flow to the absorbent pad.

SUMMARY

In accordance with the present invention, it has multiple uses, including restrooms, residential, and office applications, and commercial entrances. The used absorbent core containing liquid (i.e. urine, etc.) is not seen or touched during maintenance. This core is mated to the underside of a cartridge-top and both are tossed in the trash with no special treatment needed. The invention does not depend on hinges to remain closed and operational. The base unit of the invention is fastened to the surface to deter accidental movement. Occasional base unit maintenance involves simple unfastening and removal from the surface and cleaning with bleach or other disinfectant and refastening to the surface.

Objects and Advantages

Accordingly, several Objects and Advantages of the present invention are:

- (a) The cartridge-top with its mated absorbent core is easily disposed
- (b) The soiled absorbent core is not seen or touched during maintenance
- (c) The used cartridge-top requires no cleaning or rinsing
- (d) The waffle grid design of the cartridge-top needs no environmental polluting silicone treatment to aid liquid flow to the absorbent core
- (e) The front section of the cartridge-top is beveled reducing trip and fall hazards from shoes catching on the top
- (f) The base unit requires only occasional maintenance when cartridge-top is changed on schedule
- (g) Cross-contamination is reduce due to disposal of cartridge-top instead of cleaning it

DRAWING FIGURES

In the drawings, closely related figures have the same number but different alphabetic suffixes:

Fig. 1. shows cartridge-top.

Fig. 1A shows absorbent core.

- Fig. 2. shows base unit.
- Fig. 3. shows a section of the cartridge-top waffle grid.
- Fig. 4. Shows drain holes in the cartridge-top waffle grid.
- Fig. 5. shows tab used in removing the cartridge-top from the base unit.
- Fig. 6. shows drain holes around the edge of the cartridge-top, outside of the waffle grid area.
- Fig. 7. shows trip-resistant beveled front edge of the cartridge-top.
- Fig. 8. shows another view of the cartridge-top beveled edge.
- Fig. 9. shows absorbent core fixed to the cartridge-top (shown upside-down).
- Fig. 10. shows the backing of the absorbent core consisting of a sheet manufactured from polypropylene, vinyl, nylon or similar materials.
- Fig. 11. shows top view of the base unit fastener area.
- Fig. 12. shows base unit reverse-side (under-side) with view of skid-resistant contact points.
- Fig. 13. shows absorbent core supports in the base unit.
- Fig. 14. shows wording “**LIFT HERE**” for use in removing and cleaning the base unit.
- Fig. 15. shows wording “**CAUTION DO NOT USE WITHOUT CARTRIDGE**” notice on base unit.
- Fig. 16. shows wording “**PLACE ¼ INCH FROM WALL**” notice with two arrows on base unit.
- Fig. 17. shows “**DRY DOGS**” logo on the cartridge-top.
- Fig. 18. shows reverse-side (under-side) of base unit fastener area.
- Fig. 19. Shows cartridge-top (A) with mated absorbent core (B) and base unit (C)

DESCRIPTION—Figs. 1, 1A, and 2.

A preferred embodiment of the invention is illustrated in Figs. 1., 1A, and 2. (top views). The invention is used under a wall-mounted urinal in men’s restrooms. The cartridge-top (Fig. 1.) is made of

polypropylene, polyethylene, vinyl, nylon, rubber or any other material that can be molded or injection-molded in this fashion.

The dimensions and configurations of the cartridge-top are:

1. The thickness is typically .5mm to 1.5mm and has overall dimensions of roughly 52cm (square shaped).
2. In the preferred embodiment, the front dimension is narrowed to approximately 22mm x 24mm providing more comfortable standing room.
3. The front has also been beveled, or sloped, and rounded to minimize tripping and/or snagging and potential personal injury.

The absorbent core (Fig. 1A) is manufactured from super-absorbent material such as polymer or fiber in a percentage to cotton-fluff depending upon the embodiment. In the preferred embodiment, the Super-absorbent material is in a ten-percent proportion to the cotton-fluff. The core is sealed with a moisture barrier (Fig. 10.) to prevent leakage of the liquid into the base unit. It is sonic-welded to the cartridge-top, fixed with adhesives, or attached in some similar fashion.

The base unit is secured to a surface with various types of fasteners including Velcro or Hoop and Loop devices. In the preferred embodiment, a Hoop and Loop device from 3M Corp. will be used. The base unit is typically .5mm to 3.0mm thick with 75 to 95 durameter providing flexibility for various sloping surfaces.

Additional Embodiments

Additional embodiments include the use for wall-mounted toilets. This embodiment would be a longer system for the additional length required. Another embodiment would address floor-mounted toilets with an appropriate cutout. A future embodiment for residential or office use would have dimensions of approximately 55cm by 40cm. It would protect floors from wet boots and shoes. A similar embodiment, but larger in size, would be used in entrances to commercial buildings. In this embodiment, several separate floor protection units are joined together to provide a larger area of surface protection. A variety of methods to connect the units can be employed. Finally, embodiments of a smaller size can be used on countertops and liquid vending machines. The size would approximate 30cm x 10cm to 80cm x 30cm.

Alternative Embodiments

There are various possibilities with regard to the design of the cartridge-top waffle grid (Fig. 3.). The shape can be that of any geometric design that provides an opening at the top with a smaller outlet at the bottom. Any polygon or conical configuration allowing liquid to flow into the absorbent core (Fig. 1A) with a minimum of splashing may be used.

ADVANTAGES

From the description above, a number of advantages with this invention in the preferred embodiment are evident:

- (a) Restroom floors are dryer with urine drips and splashes contained inside the cartridge-top's absorbent core.
- (b) Maintenance is greatly decreased because the cartridge-top is disposable, requiring no cleaning or rinsing.
- (c) Cross-contamination is virtually eliminated because shoes need not touch the cartridge-top.
- (d) Tripping hazard is minimized by the beveled front edge of the cartridge-top.

In the additional embodiments, the following advantages are apparent:

- (a) Application includes floor and wall-mounted toilets and urinals.
- (b) Residential and office use protects floors from wet footwear.
Commercial businesses can minimize slip and fall hazards in wet weather.
- (c) Surface protection can be given to vending machines which dispense liquids (hot or cold).

Operation

The manner of using the floor protection system is to place the base unit under a urinal. It is secured to the floor with the fastener provided. The cartridge-top (containing the mated absorbent core) is snapped into the top of the base unit. In the preferred embodiment, the cartridge-top is changed on a scheduled basis, usually weekly.

In the additional embodiments, the absorbent core will contain higher amounts of polymers or fibers. The suggested change cycle is thirty days. If necessary, more frequent changes may be made. For each of the

additional embodiments, the operation is the same. The base unit is placed in a desired spot and fastened to the surface. The cartridge-top is positioned on top of the base unit and snapped into place.

Conclusion, Ramification, and Scope

Accordingly, the reader will see that while its main focus is on floor protection, the invention addresses countertop and other surfaces as well.

When used in the floor protection embodiment, the base unit, secured to the floor, cannot be easily dislodged. This provides more consistent protection. Maintenance is simplified by disposing both the cartridge-top and the mated absorbent core during routine trash collection. No cleaning or rinsing of the cartridge-top is required. Costly maintenance time is also reduced.

Users do not stand on the floor protection system, minimizing cross-contamination from shoes. Additionally, the beveled front edge of the cartridge-top reduces trip and fall hazards. In other applications, the invention provides liquid protection to carpeted or wood floors and countertops in residents and offices.

Although the description above contains many specifics, these should not be construed as limiting the scope of the invention. It merely provides illustrations of some of the presently preferred and additional embodiments. For example, the invention can have other shapes (i.e. circular, oval, trapezoidal, triangular, etc.). The cartridge-top's waffle grid can also have other shapes and designs. The cartridge-top could even be separate from the absorbent core, allowing changing of the core only, etc.

Thus, the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.

CLAIMS: We claim:

1. The floor protection system is an improvement over prior art. Prior art consists of (a) absorbing material placed in a base unit with hinged cover positioned directly under the anticipated liquid spills, (b) absorbing cloths or absorbent mats placed under and around the expectant liquid spills and (c) a system of a base unit holding an absorbent pad placed at one end (above or below) of a drain board. This last prior art depends upon the angulation built into the base unit to have the liquid flow properly into the absorbent pad.

Specifically, in (a), the hinged cover must be cleaned or rinsed during maintenance. The design of the cover's grille area requires treatment with environmentally contaminating silicone compounds, or the like, to promote flow of urine to the absorbent pad. The height of the base unit creates a trip and fall hazard. Users must stand on the cover, thus, cross-contamination occurs from contact with shoes.

Whereas, the floor protection system's cartridge-top with its mated absorbent core, is disposed during maintenance with no cleaning or rinsing needed. Hands never touch the soiled core during disposal. The cartridge-top needs no special silicone, or other compound, treatment to promote the flow of liquids to the absorbent core. The front edge of the cartridge-top is beveled to reduce trip and fall hazards. Users are not required to stand on the top thereby greatly reducing cross-contamination.

2. The floor protection system is an improvement over prior art, specifically, in (b), the absorbent material forms an uncovered mat under and around anticipated liquid spills. The users stand directly in the liquid and the foot traffic carries the fluid (urine, in the case of restrooms) to other areas creating continual cross-contamination. In restaurants, employees will carry the urine to the kitchen. Additionally, as in (a), there is no way to avoid directly touching the urine when disposing the mat.

Whereas, the floor protection system eliminates standing directly in the liquid (urine, in restrooms). The absorbent core containing the liquid, is protected from foot traffic by the cartridge-top above it. Hence, little or no liquid is carried elsewhere, preventing cross-contamination. Again, unlike (a) and (b), the invention allows disposal of the core without touching it directly.

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3. The floor protection system is an improvement over prior art, specifically, in (c), the base unit is essentially designed for a flat surface to operate correctly. A surface sloped toward the wall behind the urinal allows (c) to perform as planned. However, nearly all restroom floors slope to a drain located toward the middle of the room, thus negating the proper operation of (c). Moreover, in such floor conditions, the design of (c) causes the flow of urine to overflow the front edge of the mat, which accentuates, rather than alleviates, the cross-contamination problem. The wide application of (c) as a viable product is very questionable.

Whereas, the floor protection system invention eliminates the need for definite angulation of the base unit. The invention, by design, operates properly on flat and all reasonably sloped surfaces. Placement of it against the back wall and under a urinal provides unmatched floor protection. It extends from the back wall over 50cm with most urinals reaching no more than 45cm from the wall.

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SURFACE PROTECTION SYSTEM MAT

Abstract: A surface protection system consisting of three pieces, (1) cartridge-top, (2) absorbent core, and (3) base unit. The cartridge-top, made of semi-flexible material with a waffle grid design of drainage holes, traps and directs liquid spills into the absorbent core. The core is a thin layer of material attached to the entire underside of the cartridge-top, forming one unit. The core material, consisting of cotton-fluff and a super-absorbent polymer or fiber, holds and wicks the liquid away from the surface, turning it into a jell. The cartridge-top is snapped onto the top of the base unit covering it completely. It is disposed via routine trash collection during maintenance (usually weekly) and replaced by a fresh one. The base unit is also made of semi-flexible material and is extremely durable. It is placed on the floor under a urinal and secured to the floor to prevent its accidental displacement.

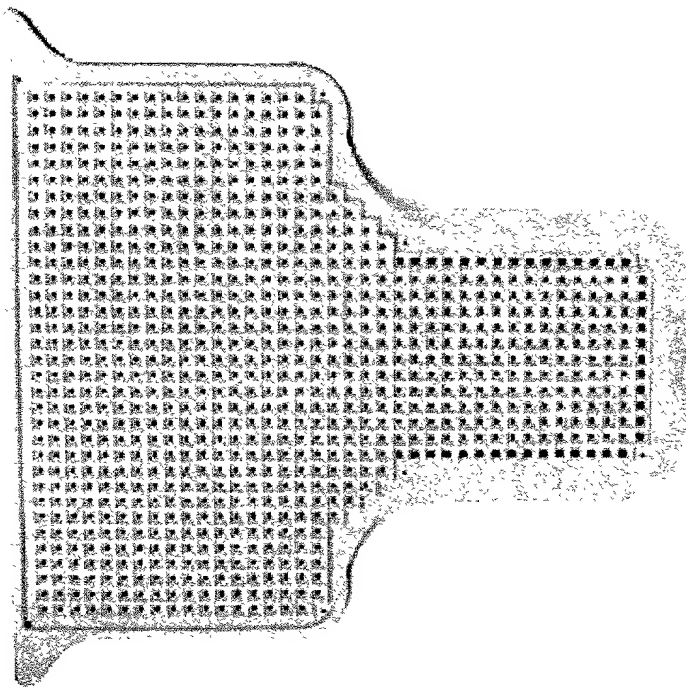


Fig 1



Fig 1A

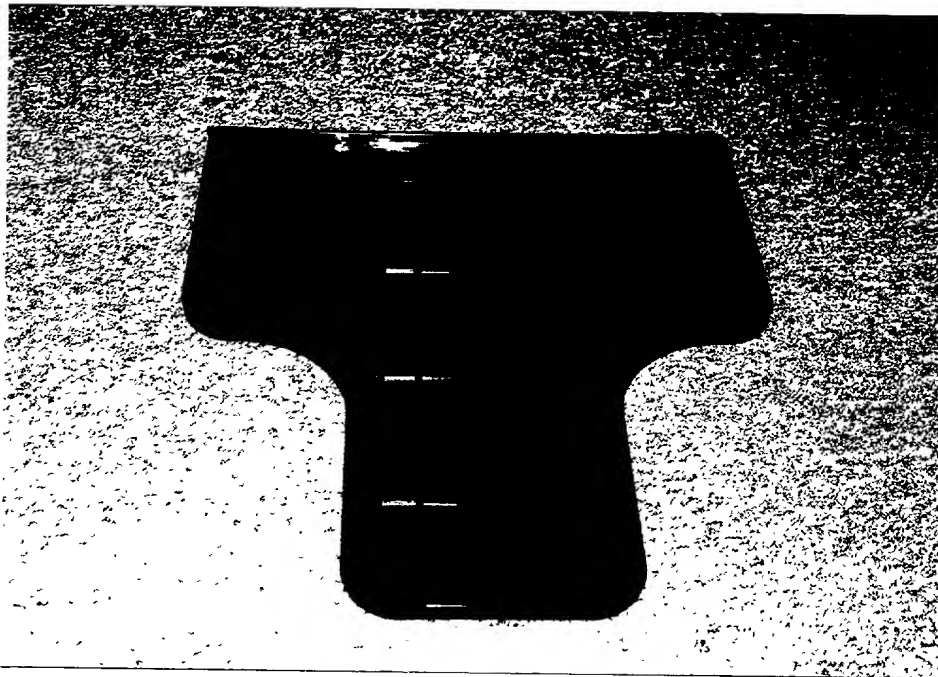


Fig 2

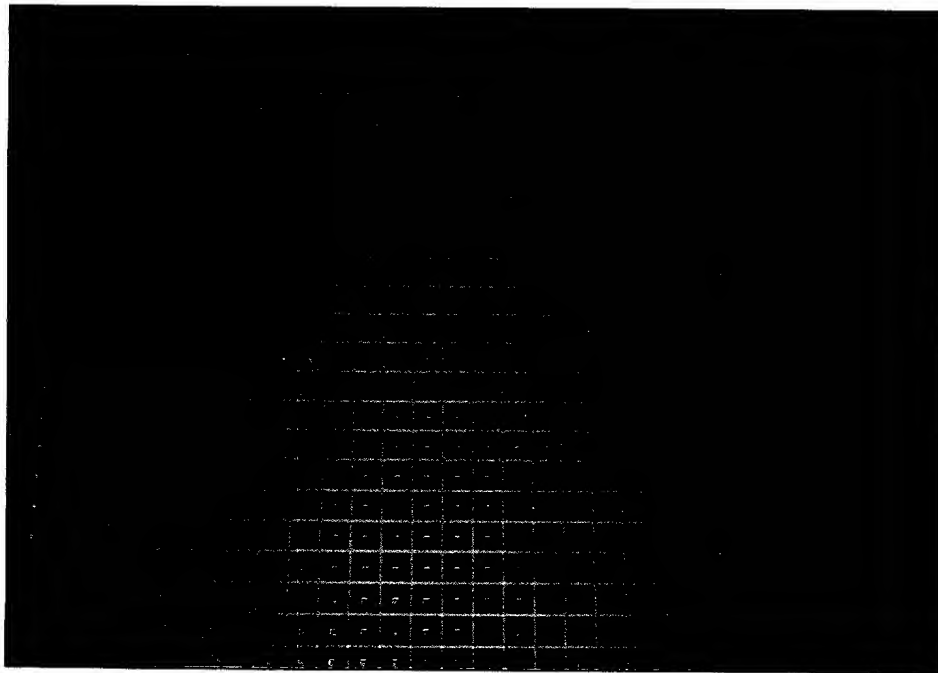


Fig 3

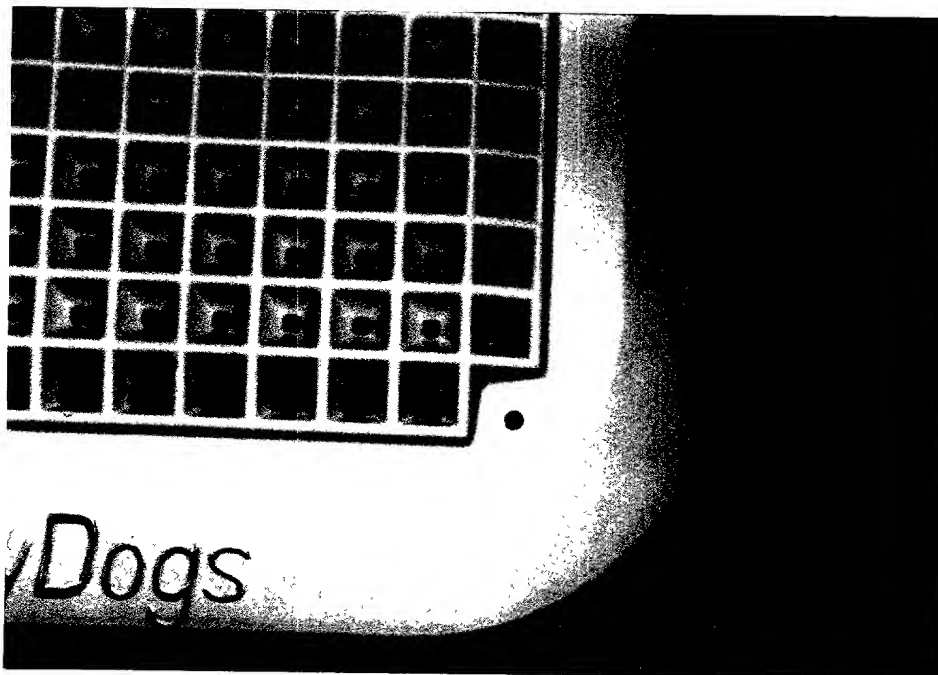


Fig 4

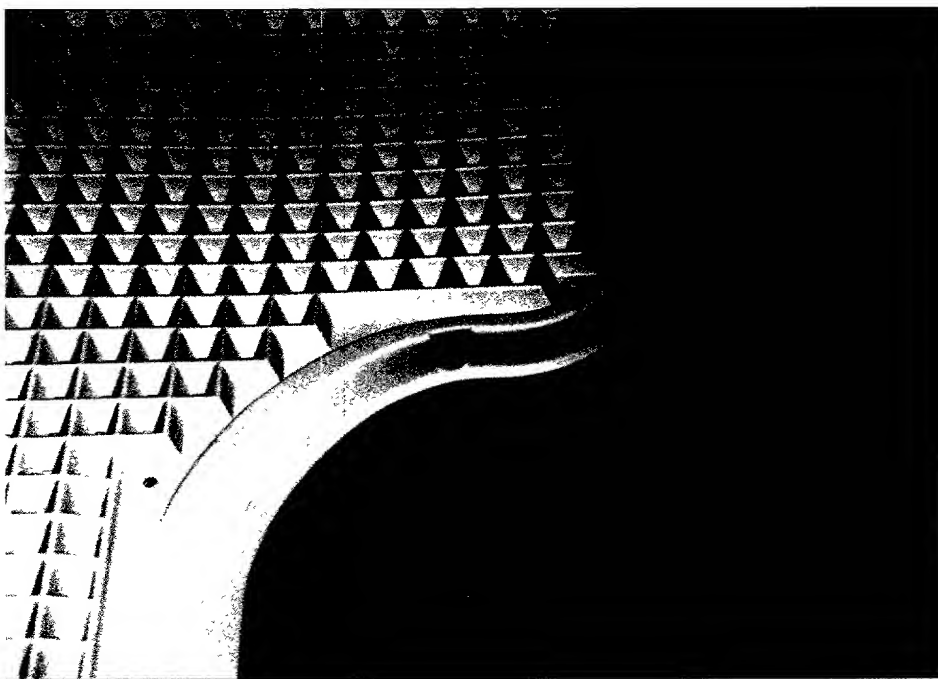


Fig 5

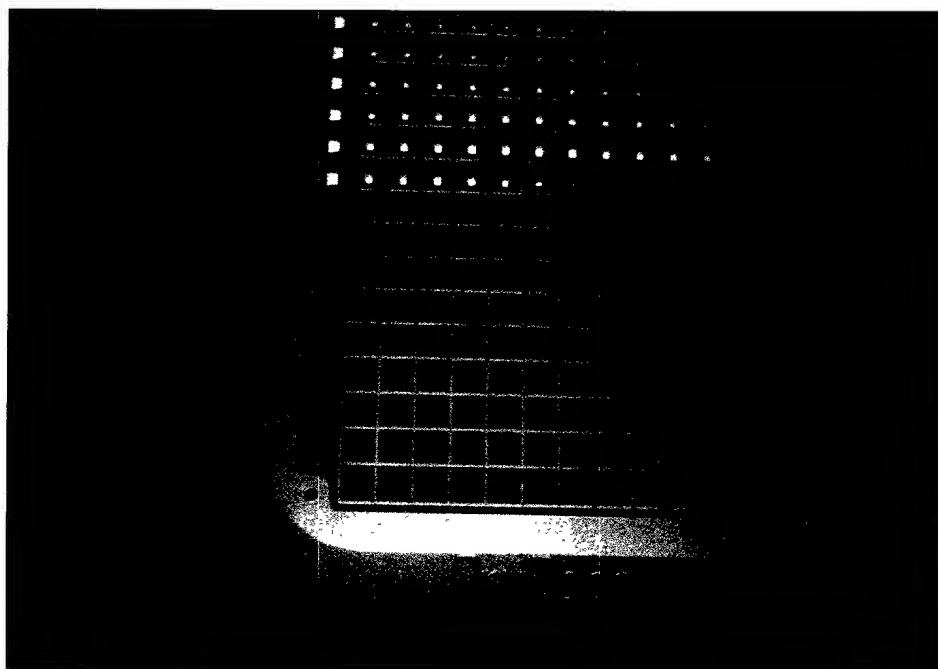


Fig 6

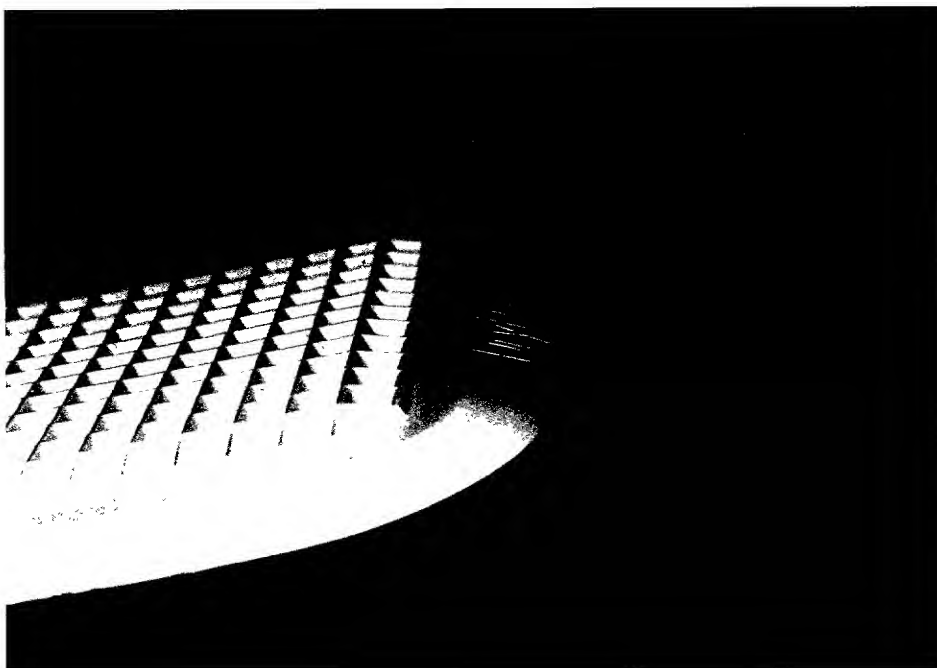


Fig 7

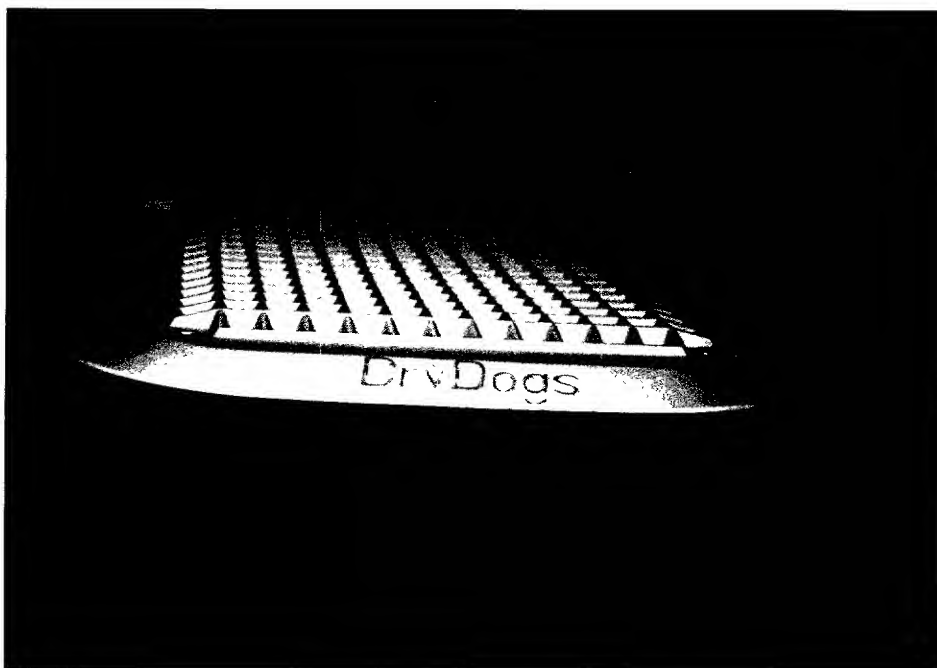


Fig 8

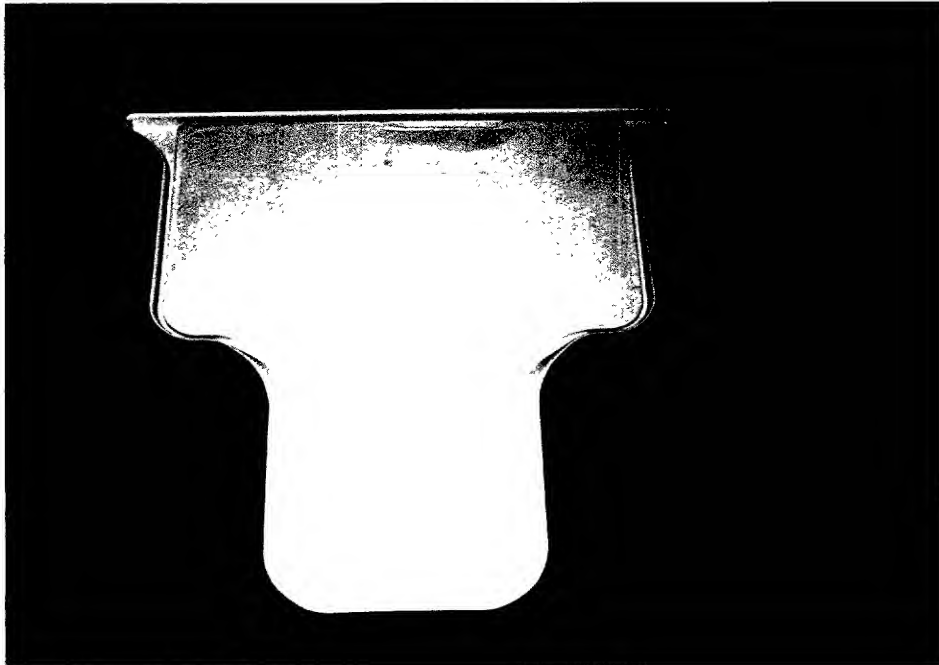


Fig 9

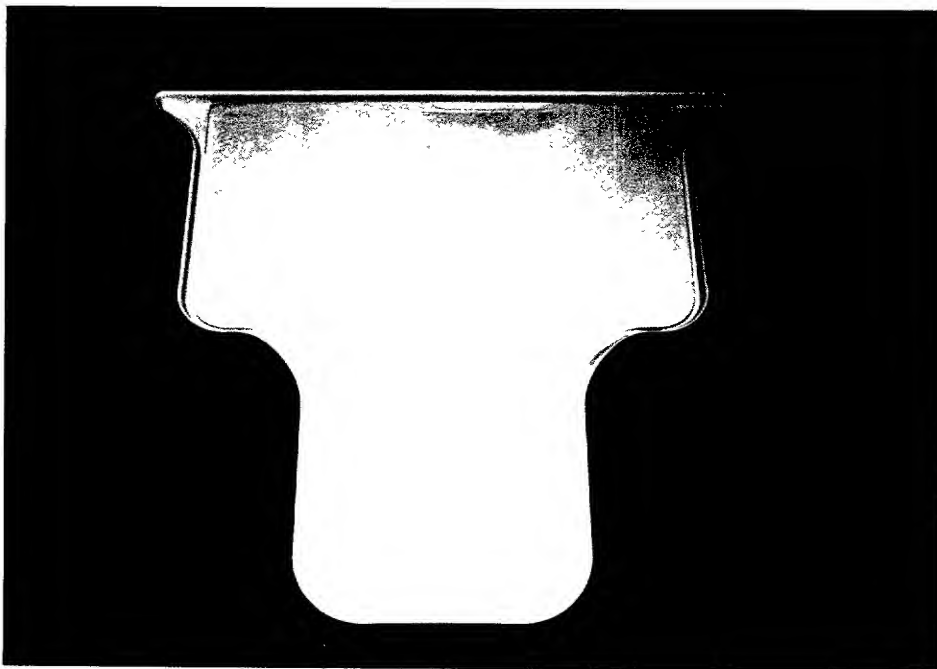
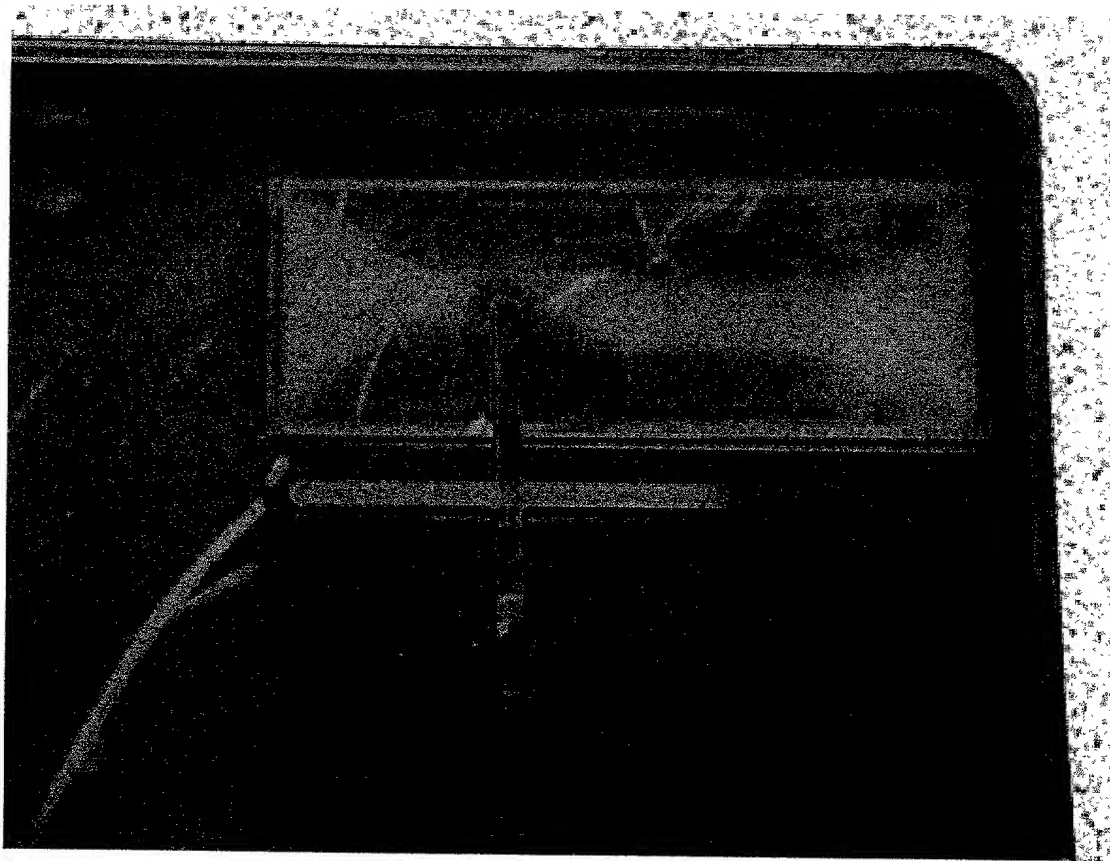


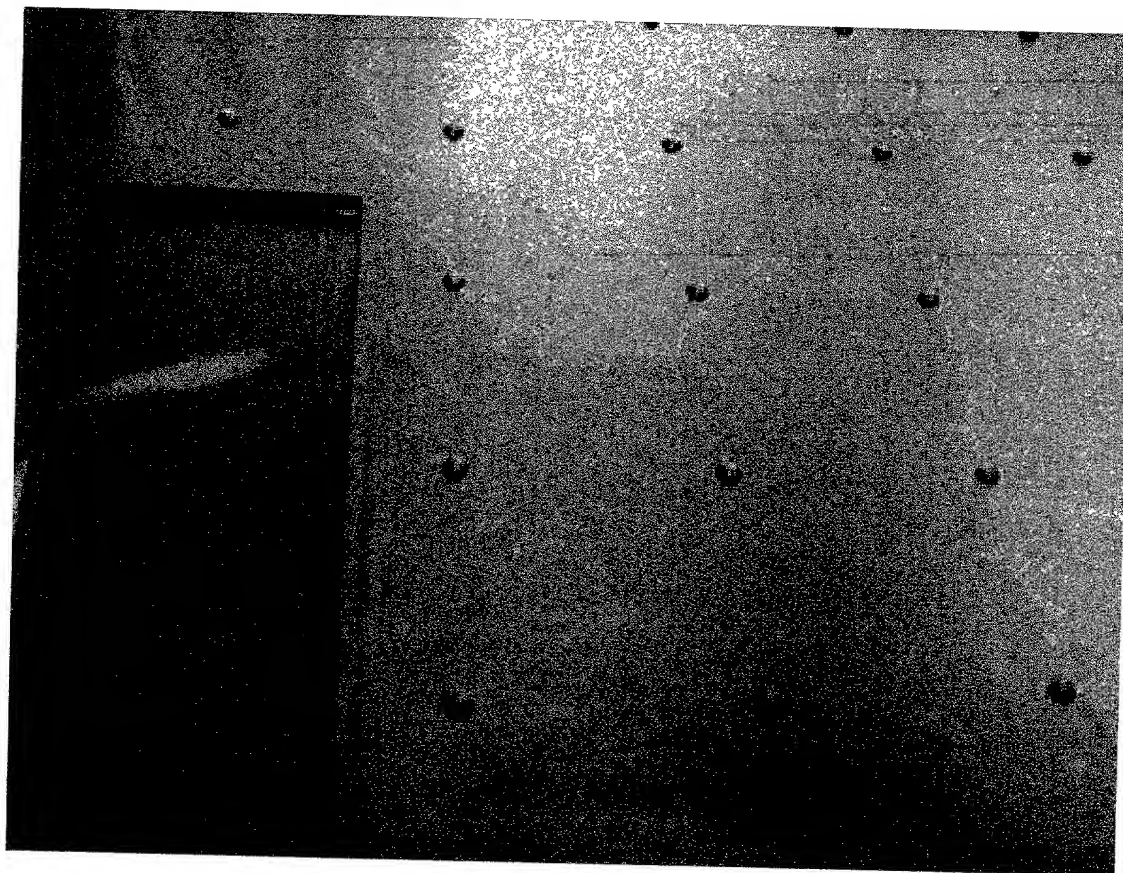
Fig 10

Fig 11



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Fig 12



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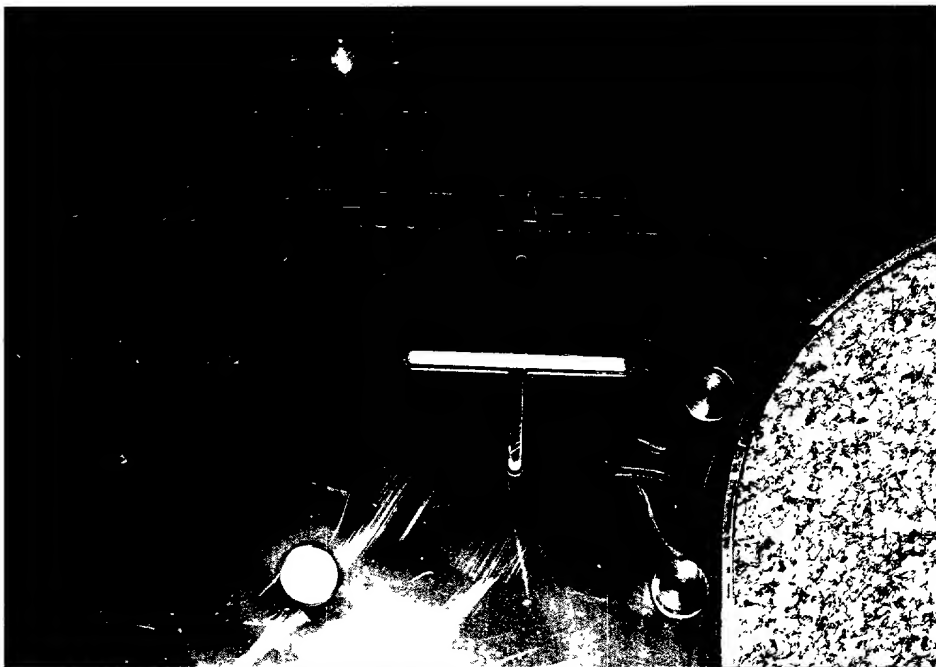


Fig 13

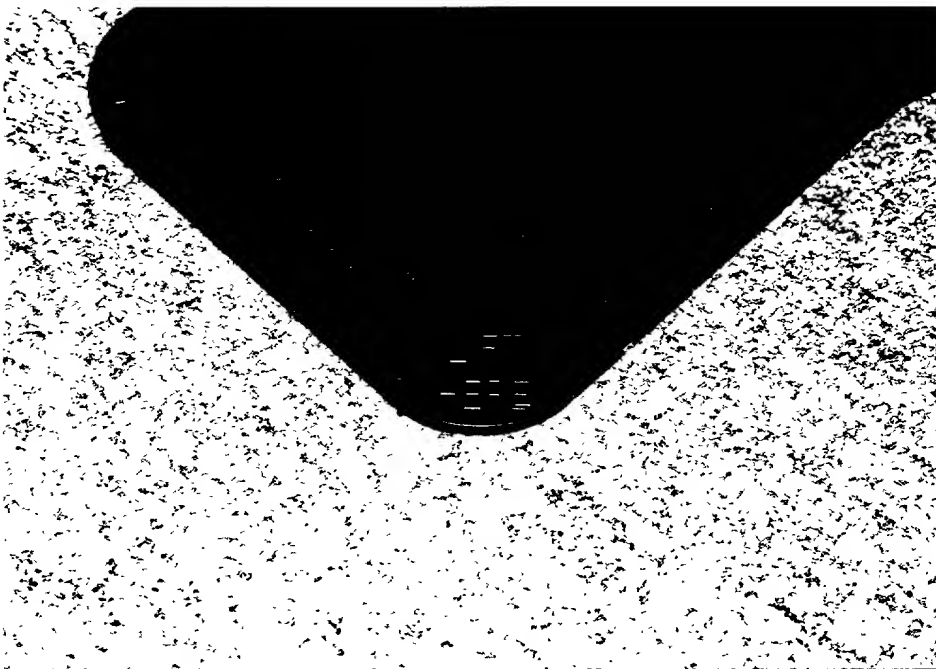


Fig 14

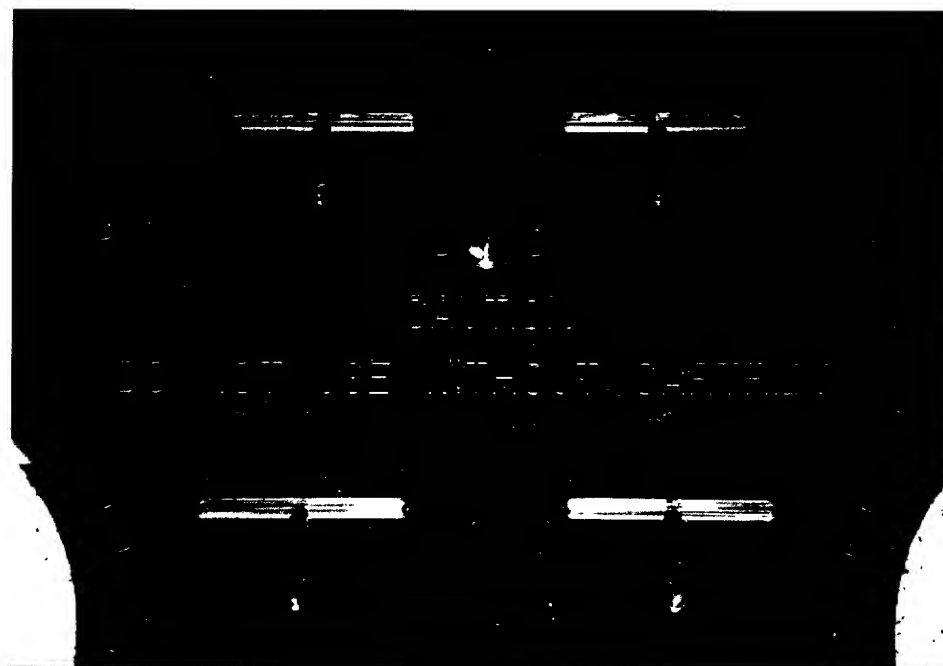


Fig 15

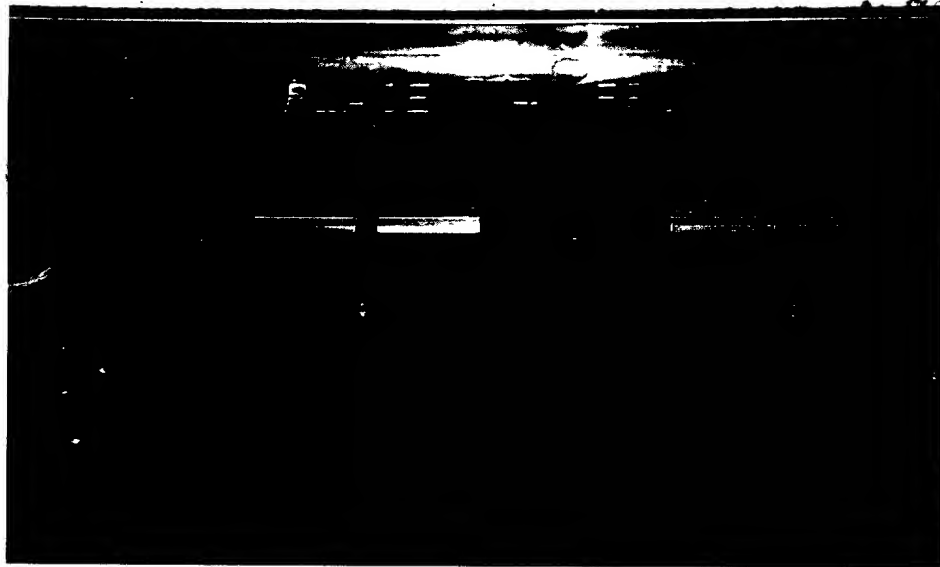


Fig 16

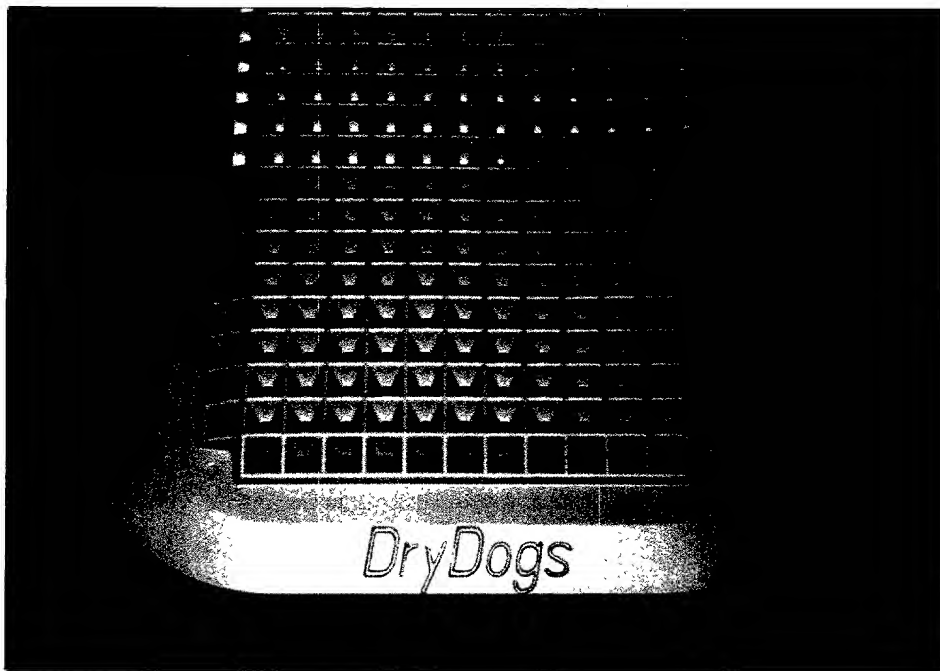


Fig 17

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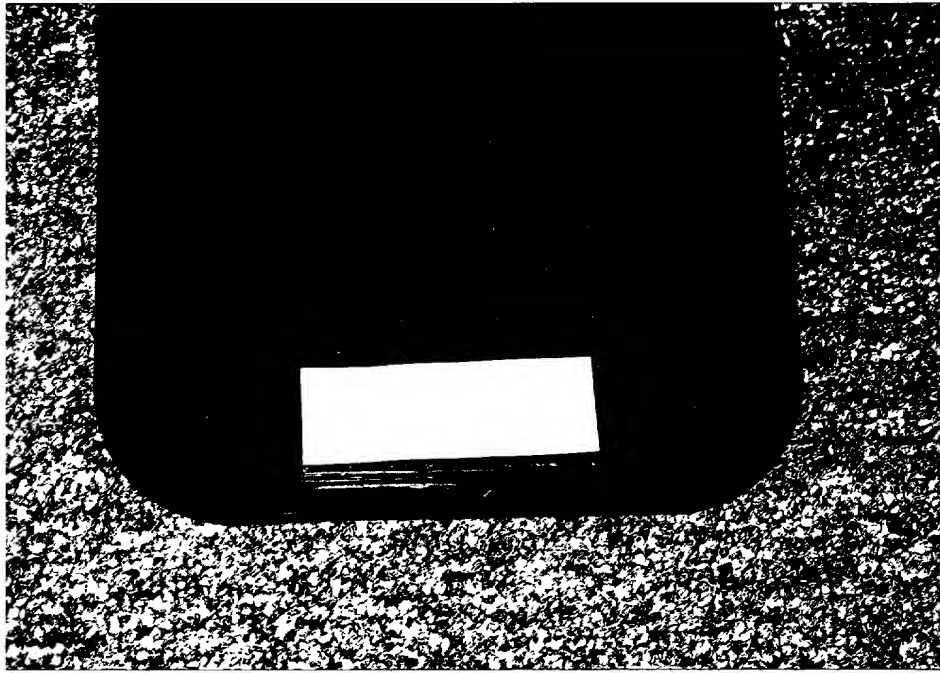


Fig 18

Fig 19 A

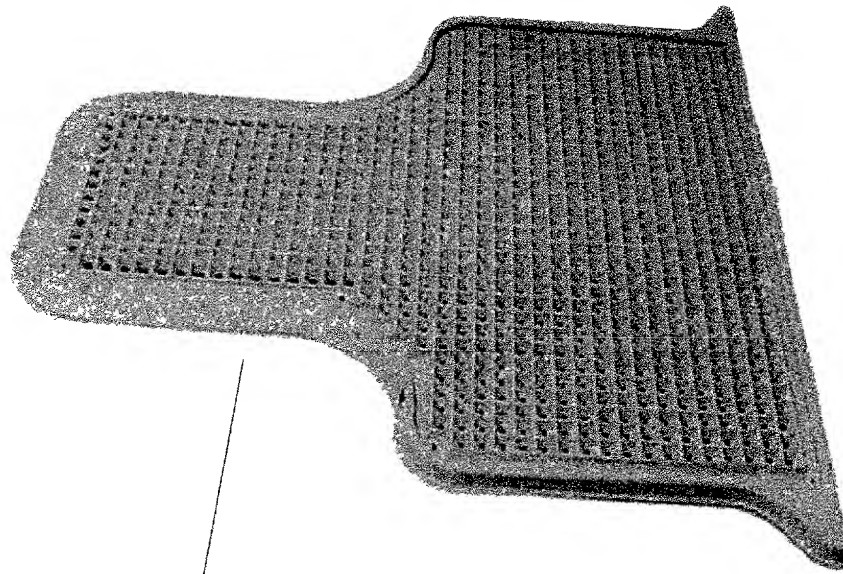
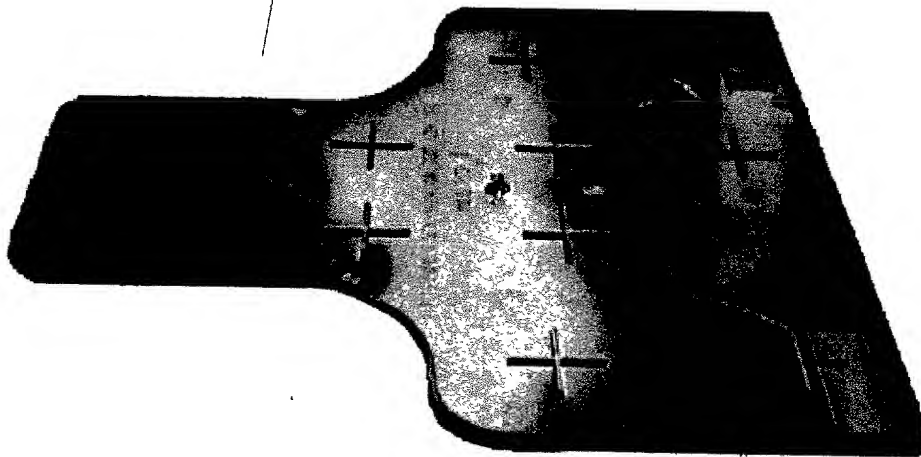


Fig 19 B



Fig 19 C



Declaration for Utility or Design Patent Application

As a below-named inventor, I hereby declare that my residence, post office address, and citizenship are as stated below next to my name and that I believe that I am the original, first, and sole inventor [if only one name is listed below] or an original, first, and joint inventor [if plural names are listed below] of the subject matter which is claimed and for which a patent is sought on the invention, the specification of which is attached hereto and which has the following title:

" Surface Protection System Mat "

I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration. I acknowledge a duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, Section 1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Please send correspondence and make telephone calls to the First Inventor below.

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